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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/663,824	09/18/2000	Kerry W. Vandesteeg	00AB015	5780

7590 03/11/2004

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EXAMINER	
TSEGAYE, SABA	
ART UNIT	**PAPER NUMBER**
2662	5

DATE MAILED: 03/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/663,824	VANDESTEEG ET AL.	
	Examiner	Art Unit	
	Saba Tsegaye	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2-4*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Eastvold et al. (US 5,745,268).

Regarding claims 1 and 11, Eastvold discloses, in Fig. 21, a standard serial communications network, the communications system comprising:

a first I/O communications circuit receiving I/O data for control of an industrial process (column 13, lines 23-35);

a first network-independent protocol device receiving the I/O data and formatting it for transmission under a network-independent protocol to produce high-reliability formatted data formatted to reduce undetected transmission loop errors (column 13, lines 35- 63);

a first standard network protocol device receiving the high-reliability formatted data and further formatting it for transmission under a protocol of the standard serial communications network, to produce doubly-formatted data for transmission on the standard serial communications network, the protocol of the standard serial communications network also formatting data to reduce undetected transmission loop errors (column 13, line 66-column 14, line 6);

a second standard network-protocol device receiving the doubly formatted data from the standard serial communications network and extracting the high-reliability formatted data according to the protocol of the standard serial communications network (column 14, lines 23-26);

a second network-independent protocol device receiving the high-reliability formatted data and extracting the I/O data (column 14, line 66-column 15, line 15); and

a second I/O communications circuit receiving I/O data for control of an industrial process from the second network-independent protocol device (column 14, lines 23-26);

whereby high-reliability transmissions may be simply obtained on an arbitrary standard serial communications network protocol (column 14, line 1-column 15, line 25).

Regarding claim 2, Eastvold discloses the industrial controller wherein the first and second I/O communications circuits are selected from the group consisting of an industrial controller and input circuit for an industrial controller, a bridge, and an output circuit for an industrial controller (column 5, lines 42-55; column 6, lines 26-39).

Regarding claims 3 and 12, Eastvold discloses the industrial controller wherein the first network-independent protocol device formats the I/O data by adding error detection data consisting of: a cyclic redundancy code related to the I/O data and a sequence count related t a local order of transmission of the I/O data with respect to other I/O data being transmitted (column 13, lines 32-57; column 17, lines 1-8).

Regarding claims 4 and 13, Eastvold discloses the industrial controller wherein the second network-independent protocol device further generates an acknowledgment message upon receipt or the I/O data and formats it under the network-independent protocol to produce a high-reliability formatted acknowledgment data; and

wherein the second standard network protocol device receives the high-reliability formatted acknowledgment data and further formats it for transmission under the protocol of the standard serial communications network, to produce doubly-formatted acknowledgment data for transmission on the standard serial communications network (column 14, lines 23-35); and

wherein the first standard network-protocol device receiving the doubly-formatted acknowledgment data from the standard serial communications network and extracts the high-reliability formatted acknowledgment data according t the protocol of the standard serial communications network (column 14, line 23-column 15, line 25); and

wherein the first network-independent protocol device receiving the high-reliability formatted acknowledgment data checks the data to detect transmission loop errors (column 15, lines 28-33).

Regarding claims 5 and 14, Eastvold discloses the industrial controller wherein the acknowledgment data includes the I/O data and the first network-independent protocol device detects errors by comparing the I/O data to the acknowledgment data (column 15, lines 28-44).

Regarding claims 6 and 15, Eastvold discloses the industrial controller wherein the first network-independent protocol device operates to start a timer upon receipt of the I/O data and

wherein the first network-independent protocol device detects errors by checking a time on the timer against an allowable time upon receipt of the acknowledgment message (column 14, lines 16-34).

Regarding claims 7 and 16, Eastvold discloses the industrial controller wherein the first network-independent protocol device transmits I/O data on a regular interval and wherein the second network-independent protocol device detects errors by comparing the time at which the last I/O data was received against the time interval (column 11, lines 54-63).

Regarding claims 8, 9, 17 and 18, Eastvold discloses the industrial controller wherein the second network-independent protocol device evaluates the high-reliability formatted data to detect transmission loop errors of the I/O data and upon the detection of an error for I/O data assume a default safety state of the I/O data (column 5, lines 27-33).

Regarding claims 10 and 19, Eastvold discloses the industrial controller wherein the standard serial communications network is selected from the group of networks consisting of Ethernet, DeviceNet, ControlNet, FireWir and Field Bus (column 4, lines 56-63).

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ravikanth et al. (US 6,331,978) discloses a method for encapsulation of labeled datagrams over serial communications links, and a method for extracting the datagrams on the receiving end of the link.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (703) 308-4754. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (703) 305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ST
March 5, 2004

JOHN PEZZLO
PRIMARY EXAMINER